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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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WENDEROTH LINS & PONACK LLP
2033 K STREET NW
SUITE 800
WASHINGTON DC 20006

IM22/0627

EXAMINER
CREPEAU, J

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 06/27/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/384,283

Applicant(s)

INOUE ET AL.

Examiner

Jonathan S. Crepeau

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2001.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office action addresses newly added claims 16-35. Claims 16-24 and 26-35 are rejected for substantially the reasons of record, and claims 23-25 are also newly rejected under 35 USC §103, as necessitated by amendment. Accordingly, this action is made final. Applicant's submission of a certified copy of priority application JP 10-245119 is noted.

Claim Rejections - 35 USC § 102

2. Claims 16-18, 21, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Kurokawa et al (U.S. Patent 6,139,986). In Figure 1 and in column 7, line 21-column 8, line 5, the reference teaches a battery comprising a circular cylindrical shaped case (63, 82) and a spirally-wound electrode assembly. A lead plate (79) is welded at point "A" to a projection jutting from the inner bottom surface of the external case. The projection, which is "curved," also corresponds with a recess on the outer surface of the external case.

Thus, the instant claims are anticipated.

Response to Arguments

Applicant's arguments filed April 23, 2001 have been fully considered but they are not persuasive. Applicants assert that Kurokawa fails to teach an external case having an inwardly

protruding projection. However, as set forth above, it is believed that Kurokawa does in fact teach a "projection." The projection may be seen as the entire concave portion of the bottom of the battery case, which includes point "A" at its center. In other words, point "A" itself is not the projection, rather, the bottom portion of the case which extends inward from the two endpoints shown near reference character "82" is defined as the projection (recess). Accordingly, the instant claims are still not considered to be distinguished over the Kurokawa reference.

Claim Rejections - 35 USC § 103

3. Claims 22 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa et al.

The reference is applied to claims 16-18, 21, and 27 for the reasons stated in paragraph 2 above.

The reference does not explicitly teach that the projection is provided on a "side-wall" of the external case, or that the projection has a conical shape.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would reasonably be able to ascertain that the projection is provided on a "side-wall" of the external case. If the battery is rotated 90 degrees in either direction, it is seen that the projection is in fact provided on a side wall of the case. Accordingly, the limitation of a projection provided on the side wall of the external case is not considered to distinguish over the Kurokawa et al. reference.

Regarding the conical shape of the projection recited in instant claim 28, this recitation is not seen to patentably distinguish over the reference. The courts have generally held that changes in shape, such as the projection of Kurokawa et al., are obvious in the absence persuasive evidence that the claimed configuration is significant (see also MPEP §2144.04).

4. Claims 19, 20, 23, 24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa et al. as applied to claims 16-18, 21, and 27 above, and further in view of Machida et al (U.S. Pat. 5,443,925).

Kurokawa et al. do not explicitly teach that the external case is rectangular or elliptical or that the spiral electrode assembly is elliptical.

Machida et al. teach a battery comprising a rectangular or elliptical external case and an elliptical electrode body in column 1, lines 60-62.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because as exemplified by the patent of Machida et al., rectangular and elliptical cases in conjunction with elliptical electrode assemblies are well-known in the art. In column 2, line 49, Machida et al. disclose that these configurations provide for reliable electrical connection of the spiral electrode unit with the external case. Accordingly, the artisan would have sufficient motivation to use these configurations in the battery of Kurokawa et al.

5. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa et al. as applied to claims 16-18, 21, and 27 above, and further in view of Omaru et al (U.S. Patent 5,916,707).

Kurokawa et al. do not explicitly teach that the external case is rectangular or that the electrode assembly comprises stacked planar electrodes and separators.

In Figure 1, Omaru et al. teach a rectangular battery comprising an electrode assembly having stacked planar electrodes and separators.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because as exemplified by the patent of Omaru et al., this configuration is conventional in the art. As taught in column 2, lines 10-20, this configuration allows for good electrode contact and battery charge characteristics, and high reliability and energy density. Accordingly, the artisan would find sufficient motivation to use a rectangular case and stacked electrode assembly in the battery of Kurokawa et al.

6. Claims 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa et al. as applied to claims 16-18, 21, and 27 above, and further in view of Dorogi et al (U.S. Patent 4,767,682).

Kurokawa et al. do not explicitly teach that the lead plate has a flexible portion in the center which is surrounded by holes having projecting portions which make contact with the electrode assembly.

In Figures 13 and 14 and in column 9, lines 48-68, Dorogi et al. teach a disk-shaped lead plate for a battery comprising a flexible projecting portion (76) which electrically contacts the external terminal, and circular projections (80) which make contact with the electrode assembly.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because as exemplified by the patent of Dorogi et al., the instantly claimed lead plate configuration is well-known in the art. In the cited passage, Dorogi et al. disclose that the width of the strip (78) on the projecting portion may be adjusted in order to break upon passage of a specific amount of current. Accordingly, the artisan, realizing that this configuration provides good overcharge protection in a secondary battery, would have sufficient motivation to use the lead plate of Dorogi et al. in the battery of Kurokawa et al.

Although instant claim 32 recites that the plate has holes with projections around the peripheries of the holes, the projections (80) of Dorogi et al. are functionally equivalent to the claimed projections and are therefore considered to render the claimed projections obvious to a skilled artisan.

7. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa et al. as applied to claims 16-18, 21, and 27 above, and further in view of Hartmann et al (U.S. Patent 4,239,837).

Kurokawa et al. do not explicitly teach that an electrically conductive, anti-corrosive coating is applied to an outside surface of the external case.

Hartmann et al. teach a battery comprising an external case having an outer coating of an anti-corrosive silicate or oxide in column 2, line 47-column 3, line 4.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because as exemplified by the patent of Hartmann et al., anti-corrosive coatings are known in the art for coating the external portions of battery cases. In the cited passage, Hartmann et al. disclose that these coatings provide additional security if the cell wall corrodes from the inside. Accordingly, the artisan would have sufficient motivation to apply an anti-corrosive coating to the external case of Kurokawa et al.

Although Hartmann et al. do not explicitly teach that the coating is electrically conductive, the disclosure of oxides and silicates would render this limitation obvious to a person of ordinary skill in the art. Numerous oxides and silicates possess at least some electrical conductivity; therefore the artisan could reasonably ascertain that the coating could be electrically conductive.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gabrielle Brouillette, can be reached at (703) 308-0756. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900. Additionally, documents may be faxed to (703) 305-3599.

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP 1700

JSC

June 22, 2001